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10/089035

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PATENT
8030-1002

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of: Takaaki TOYOOKA et al.

Appl. No.:

NEW

Group:

Filed:

March 26, 2002

Examiner:

For:

STAINLESS STEEL TUBE FOR AUTOMOBILE
STRUCTURE

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

March 26, 2002

Sir:

The following preliminary amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE ABSTRACT OF THE DISCLOSURE:

Please replace the Abstract of the Disclosure with the rewritten Abstract of the Disclosure attached on a separate sheet attached hereto.

IN THE CLAIMS:

Please amend the claims as follows:

--3. (Amended) A stainless steel tube according to claim 1, wherein the diameter of ferrite grain is preferably not more than 8 μm .

4. (Amended) A stainless steel tube according to claim 1, wherein the area ratio of said martensite is not more than 30 %.

5. (Amended) A stainless steel tube according to claim 1, further comprising, in addition to the aforementioned chemical composition, at least one type of element selected from the group consisting of: not more than 0.6 mass % of Cu; not more than 0.6 mass % of Ni; not more than 2.5 mass % of Mo; not more than 1.0 mass % of Nb; not more than 1.0 mass % of Ti; and not more than 1.0 mass % of V.

6. (Amended) A automobile structure member having excellent fatigue resistance property, which member is produced by subjecting the stainless steel tube of claim 1 to a secondary forming treatment and a heat refining treatment so that the tensile strength thereof becomes not smaller than 800 MPa.--

Please add the following claims:

--7. (New) A stainless steel tube according to claim 2, wherein the diameter of ferrite grain is preferably not more than 8 μm .--

--8.(New) A stainless steel tube according to claim 7, wherein the area ratio of said martensite is not more than 30 %.--

--9.(New) A stainless steel tube according to claim 8, further comprising, in addition to the aforementioned chemical composition, at least one type of element selected from the group consisting of: not more than 0.6 mass % of Cu; not more than 0.6 mass % of Ni; not more than 2.5 mass % of Mo; not more than 1.0 mass % of Nb; not more than 1.0 mass % of Ti; and not more than 1.0 mass % of V.--

Docket No. 8030-1002

REMARKS

Claims 1-9 are pending in the present application.
Claims 7-9 have been added.

Entry of the above amendments is earnestly solicited.
An early and favorable first action on the merits is earnestly requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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BC/bam
Attachments

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT OF THE DISCLOSURE:

The Abstract of the Disclosure has been amended as follows:

ABSTRACT

A stainless steel tube~~for a automobile structure member~~ having excellent formability for secondary operation comprises: a chemical composition including not more than 0.20 mass % of C; not more than 1.5 mass % of Si; not more than 2.0 mass % of Mn; 10-18 mass % of Cr; not more than 0.03 mass % of N; or further at least one type of element selected from the group of : not more than 0.6 mass % of Cu; not more than 0.6 mass % of Ni; not more than 2.5 mass % of Mo; not more than 1.0 mass % of Nb; not more than 1.0 mass % of Ti; and not more than 1.0 mass % of V; Fe as the remainder and the inevitable impurities; and a structure~~which is~~ constituted of ferrite or ferrite and martensite, wherein the TE value defined by the following formula~~(1)~~ exceeds 25,000MPa~~□~~%.

~~TE value~~Mpa·%, $TE = TS \times (El + 21.9)$

~~In the aforementioned formula,~~21.9) TS represents the tensile strength in the tube axial direction~~(MPa)~~, and El represents the elongation in ~~the tube axial direction (%)~~.such direction.

IN THE CLAIMS:

The claims have been amended as follows:

3. (Amended) A stainless steel tube according to claim 1 ~~or~~ 2, wherein the diameter of ferrite grain is preferably not more than 8 μ m.

4. (Amended) A stainless steel tube according to ~~any one of~~ claims 1 to 3, claim 1, wherein the area ratio of said martensite is not more than 30 %.

5. (Amended) A stainless steel tube according to ~~any one of~~ claims 1 to 4, claim 1, further comprising, in addition to the aforementioned chemical composition, at least one type of element selected from the group consisting of: not more than 0.6 mass % of Cu; not more than 0.6 mass % of Ni; not more than 2.5 mass % of Mo; not more than 1.0 mass % of Nb; not more than 1.0 mass % of Ti; and not more than 1.0 mass % of V.

6. (Amended) A automobile structure member having excellent fatigue resistance property, which member is produced by subjecting the stainless steel tube of ~~any one of claims 1 to 5~~ claim 1 to a secondary forming treatment and a heat refining treatment so that the tensile strength thereof becomes not smaller than 800 MPa.

ABSTRACT

A stainless steel tube having excellent formability for secondary operation comprises: a chemical composition including not more than 0.20 mass % of C; not more than 1.5 mass % of Si; not more than 2.0 mass % of Mn; 10-18 mass % of Cr; not more than 0.03 mass % of N; or further at least one type of element selected from the group of : not more than 0.6 mass % of Cu; not more than 0.6 mass % of Ni; not more than 2.5 mass % of Mo; not more than 1.0 mass % of Nb; not more than 1.0 mass % of Ti; and not more than 1.0 mass % of V; Fe as the remainder and the inevitable impurities; and a structure constituted of ferrite or ferrite and martensite, wherein the TE value defined by the following formula exceeds 25,000 Mpa·%, $TE = TS \times (El + 21.9)$ TS represents the tensile strength in the tube axial direction, and El represents the elongation in such direction.